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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,911	09/12/2003	Mark S. Lanus	IS01190MCG	1793
23330	7590	09/28/2006	EXAMINER	
MOTOROLA, INC. LAW DEPARTMENT 1303 E. ALGONQUIN ROAD SCHAUMBURG, IL 60196			CRAIG, DWIN M	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/661,911	LANUS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dwin M. Craig	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 September 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-32 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-32 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 12 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/12/03; 2/10/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

1. Claims 1-32 have been presented for examination.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The use of the term "*permitting*" in independent claims 1, 9, 12, 15, 22, 25, 28, 29 & 32 fails to disclose a *concrete* step of actually performing an action, the claimed recitation, using independent claim 1 as an example, "...*the real-time kernel permitting execution of the executable...*" only discloses that there is no structural impediment in the *real-time* kernel preventing the *execution of the executable*, therefore the current claim language fails to actually disclose the *execution* of any actual computer instructions and therefore the current claim language fails to disclose or suggest a *concrete, tangible and useful* result as required by 35 USC § 101.

- 2.1 Claim 9 appears to be claiming software, i.e. *the real-time kernel* and not the functionality of the software when the software is being executed on a processor, see Section 2106 of the MPEP, the relevant portion of which is disclosed here:

*Computer programs are often recited as part of a claim. Office personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim. The same result occurs when a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program. Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material per se and hence nonstatutory.*

*Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and Office personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material.*

*When a computer program is claimed in a process where the computer is executing the computer program's instructions, Office personnel should treat the claim as a process claim. See paragraph IV.B.2(b), below. When a computer program is recited in conjunction with a physical structure, such as a computer memory, Office personnel should treat the claim as a product claim. See paragraph IV.B.2(a).*

- 2.3 It is noted by the examiner that a *real-time kernel* is software.

Amendment is required.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- 3.1 As regards independent claims 1, 9, 12, 15, 22, 25, 28, 29 and 32, and using independent claim 1 as an example, the following phrase, “*...the real-time kernel permitting execution of the executable...*” is failing to particularly point out and distinctly claim the invention. The current claim language appears to cover anything and everything that does not prohibit actions occurring when the *executable* is being *executed*.

Amendment is required.

***Claim Interpretation***

4. Applicants' claims have been given the broadest reasonable interpretation. The recitation *a computer network* has not been given patentable weight because the recitation occurs in the preamble of claims 22, 25, 28 & 32. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

It is further noted that the reference relied upon by the Examiner, specifically, "Win32: A suitable Standard for Real-Time Embedded Systems?" by Peter Peterson discloses a Real-Time kernel that operates with Windows NT, it is well known in the computer art that Windows NT is a *network* operating system and was design to be used with computer servers and workstations that are all part of a computer network.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4-16 and 18-32 are rejected under 35 USC § 102(b) as being anticipated by "Win32: A suitable Standard for Real-Time Embedded Systems?" by Peter Peterson hereafter referred to as *Peterson*.

5.1 As regards independent claim 1, *Peterson* discloses, *a method, comprising: providing a real-time kernel; (page 64 Figure 1 RTKernel-32 and text) loading an executable into memory,*

*wherein the memory is allocated for the executable, and wherein the executable is programmed to execute in a WIN32 execution environment; (top of page 64, "...create a WIN32 compatible environment..." ) the real-time kernel permitting execution of the executable in an emulated WIN32 execution environment, (Figure 2 on page 66 and in the section on page 66 entitled "SCALABILITY"...different parts of its Win32 emulation library are modules linked...) wherein the emulated WIN32 execution environment utilizes an emulated subset of WIN32 execution environment services; and the executable operating real-time in the emulated WIN32 execution environment (pages 64-68 and more specifically Figure 2 on page 66).*

**5.2** As regards dependent claim 2 *Peterson* discloses that the *Real-time kernel* supports *scalability* (page 65) and it is noted that Windows NT is an operating system that supports multiple processors, i.e. scalability (see page 68 and the term *multi-processor*).

**5.3** As regards dependent claim 4 *Peterson* discloses, *interrupt handling* (page 66 "...support for interrupt handling...").

**5.4** As regards dependent claim 5, *Peterson* discloses, *an exception handler* (page 65 in the section entitled "EXAMPLE:RTTARGET-32 AND RTKERNEL-32 FROM ON TIME" "...This includes the latest C++ language features such as exception handling...").

**5.5** As regards dependent claim 6, *Peterson* discloses, *a memory manager* (page 66 "...A strong feature of RTTarget-32 is its efficient use of the memory management...").

**5.6** As regards dependent claim 7, *Peterson* discloses, *x86-based architecture and hardware* (page 64 "...a range of 32-bit Intel i80386...").

**5.7** As regards dependent claim 8, *Peterson* discloses, *a single threaded real-time kernel* (page 65 "...The idea is to run NT as a single task...").

5.8 As regards independent claim 9, *Peterson discloses, a real-time kernel, comprising: an interrupt handler* (page 66 "...support for interrupt handling..."); *an exception handler* (page 65 in the section entitled "EXAMPLE:RTTARGET-32 AND RTKERNEL-32 FROM ON TIME" "...This includes the latest C++ language features such as exception handling..."); *and a memory manager* (page 66 "...A strong feature of RTTarget-32 is its efficient use of the memory management..."), *wherein the real-time kernel permits execution of an executable in an emulated WIN32 execution environment* (Figure 2 on page 66 and in the section on page 66 entitled "SCALABILITY"...different parts of its Win32 emulation library are modules linked...), *wherein the executable is programmed to execute in a WIN32 execution environment, and wherein the executable operates real-time in the emulated WIN32 execution environment* (pages 64-68 and more specifically Figure 2 on page 66).

5.9 As regards dependent claim 10, *Peterson discloses, a single threaded real-time kernel* (page 65 "...The idea is to run NT as a single task...").

5.10 As regards dependent claim 11, *Peterson discloses, x86-based architecture and hardware* (page 64 "...a range of 32-bit Intel i80386...").

5.11 As regards independent claim 12, *Peterson discloses, an apparatus, comprising: a processor* (page 64 "...a range of 32-bit Intel i80386..."); *a memory* (page 66 "...Hardware breakpoints can be set in ROM or RAM and do not change the programs run-time behavior..."); *and a real-time kernel having a subset of WIN32 execution environment services stored in the memory* (page 64 Figure 1 RTKernel-32 and text), *wherein the real-time kernel permits execution of an executable in an emulated WIN32 execution environment on the processor* (Figure 2 on page 66 and in the section on page 66 entitled "SCALABILITY"...different parts of

its Win32 emulation library are modules linked...), *wherein the executable is programmed to execute in a WIN32 execution environment, and wherein the executable operates real-time in the emulated WIN32 execution environment* (pages 64-68 and more specifically Figure 2 on page 66).

**5.12** As regards dependent claim 13, *Peterson discloses, x86-based architecture and hardware* (page 64 "...a range of 32-bit Intel i80386...").

**5.13** As regards dependent claim 14, *Peterson discloses, a single threaded real-time kernel* (page 65 "...The idea is to run NT as a single task...").

**5.14** As regards independent claim 15, *Peterson discloses, a method, comprising: providing a real-time kernel; loading an executable into memory* (page 64 Figure 1 RTKernel-32 and text), *wherein the memory is allocated for the executable, and wherein the executable is programmed to execute in a WIN32 execution environment; the real-time kernel creating an emulated WIN32 execution environment which permits execution of the executable in an emulated WIN32 execution environment* (Figure 2 on page 66 and in the section on page 66 entitled "SCALABILITY"...different parts of its Win32 emulation library are modules linked...), *wherein the emulated WIN32 execution environment utilizes an emulated subset of WIN32 execution environment services; and the executable operating real-time in the emulated WIN32 execution environment* (pages 64-68 and more specifically Figure 2 on page 66).

**5.15** As regards dependent claim 16, *Peterson discloses that the Real-time kernel supports scalability* (page 65) and it is noted that Windows NT is an operating system that supports multiple processors, i.e. scalability (see page 68 and the term *multi-processor*).

**5.16** As regards dependent claim 18, *Peterson discloses, interrupt handling* (page 66 “...support for interrupt handling...”):

**5.17** As regards dependent claim 19, *Peterson discloses, an exception handler* (page 65 in the section entitled “EXAMPLE:RTTARGET-32 AND RTKERNEL-32 FROM ON TIME” “...This includes the latest C++ language features such as exception handling...”).

**5.18** As regards dependent claim 20, *Peterson discloses, a memory manager* (page 66 “...A strong feature of RTTarget-32 is its efficient use of the memory management...”).

**5.19** As regards dependent claim 21, *Peterson discloses, a single threaded real-time kernel* (page 65 “...The idea is to run NT as a single task...”).

**5.20** As regards independent claim 22, *Peterson discloses, a computer network* (Windows NT is a network operating system, see page 67 “...Of course RTTarget-32 does not attempt to be a Windows NT clone. Only a subset of NT’s API...”), *comprising: a plurality of processors; (Real-time kernel supports scalability* (page 65) and it is noted that Windows NT is an operating system that supports multiple processors, i.e. scalability (see page 68 and the term *multi-processor*) *a memory* (page 68, “...A minimal RTTARGET-32 program can run in about 12K of ROM and 4K of RAM...”); *and a real-time kernel having a subset of WIN32 execution environment services stored in the memory* (see page 67 “...Of course RTTarget-32 does not attempt to be a Windows NT clone. Only a subset of NT’s API...”), *wherein the real-time kernel permits execution of an executable in an emulated WIN32 execution environment on at least one of the plurality of processors*, (Figure 2 on page 66 and in the section on page 66 entitled “SCALABILITY”...different parts of its Win32 emulation library are modules linked...) *wherein the executable is programmed to execute in a WIN32 execution environment, and*

*wherein the executable operates real-time in the emulated WIN32 execution environment (pages 65 and 66).*

**5.21** As regards dependent claim 23, *Peterson discloses, x86-based architecture and hardware* (page 64 "...a range of 32-bit Intel i80386...").

**5.22** As regards dependent claim 24, *Peterson discloses, a single threaded real-time kernel* (page 65 "...The idea is to run NT as a single task...").

**5.23** As regards independent claim 25, *Peterson discloses, a computer network*, (Windows NT is a network operating system, see page 67 "...Of course RTTarget-32 does not attempt to be a Windows NT clone. Only a subset of NT's API...") *comprising: a plurality of processors; (Real-time kernel supports scalability* (page 65) and it is noted that Windows NT is an operating system that supports multiple processors, i.e. scalability (see page 68 and the term *multi-processor*) *a plurality of memories corresponding to each of the plurality of processors;* (page 68, "...A minimal RTTARGET-32 program can run in about 12K of ROM and 4K of RAM...") *and a real-time kernel having a subset of WIN32 execution environment services stored in each of the plurality of memories,* ( see page 67 "...Of course RTTarget-32 does not attempt to be a Windows NT clone. Only a subset of NT's API...") *wherein the real-time kernel permits execution of an executable in an emulated WIN32 execution environment on one of the plurality of processors, wherein the executable is programmed to execute in a WIN32 execution environment, and wherein the executable operates real-time in the emulated WIN32 execution environment* (Figure 2 on page 66 and in the section on page 66 entitled "SCALABILITY...different parts of its Win32 emulation library are modules linked..." and pages 65 & 66).

**5.24** As regards dependent claim 26, *Peterson discloses, x86-based architecture and hardware* (page 64 "...a range of 32-bit Intel i80386...").

**5.25** As regards dependent claim 27, *Peterson discloses, a single threaded real-time kernel* (page 65 "...The idea is to run NT as a single task...").

**5.26** As regards independent claim 28, *Peterson discloses, a method of operating a computer network*, (Windows NT is a network operating system, see page 67 "...Of course RTTarget-32 does not attempt to be a Windows NT clone. Only a subset of NT's API...") *comprising:*

*providing a real-time kernel; loading an executable into memory, wherein the memory is allocated for the executable, and wherein the executable is programmed to execute in a WIN32 execution environment;* (Figure 2 on page 66 and all of the text on page 65 & 66) *the real-time kernel permitting execution of the executable in an emulated WIN32 execution environment,* (Figure 2 on page 66 and in the section on page 66 entitled "SCALABILITY...different parts of its Win32 emulation library are modules linked..." and pages 65 & 66) *wherein the emulated WIN32 execution environment utilizes an emulated subset of WIN32 execution environment services; and the executable operating real-time in the emulated WIN32 execution environment* (text on pages 64-65).

**5.27** As regards independent claim 29, *Peterson discloses, a computer-readable medium containing computer instructions for instructing a processor to perform a method of operating an apparatus, the instructions comprising: providing a real-time kernel;* (page 64 Figure 1 RTKernel-32 and text) *loading an executable into memory, wherein the memory is allocated for the executable, and wherein the executable is programmed to execute in a WIN32 execution environment;* (pages 64-65) *the real-time kernel permitting execution of the executable in an*

*emulated WIN32 execution environment, wherein the emulated WIN32 execution environment utilizes an emulated subset of WIN32 execution environment services; and the executable operating real-time in the emulated WIN32 execution environment* (Figure 2 on page 66 and in the section on page 66 entitled “SCALABILITY...different parts of its Win32 emulation library are modules linked...” and pages 65 & 66).

**5.28** As regards dependent claim 30, *Peterson discloses, x86-based architecture and hardware* (page 64 “...a range of 32-bit Intel i80386...”).

**5.29** As regards dependent claim 31, *Peterson discloses, a single threaded real-time kernel* (page 65 “...The idea is to run NT as a single task...”).

**5.30** As regards independent claim 32, *Peterson discloses, a computer-readable medium containing computer instructions for instructing a processor to perform a method of operating a computer network,* (Windows NT is a network operating system, see page 67 “...Of course RTTarget-32 does not attempt to be a Windows NT clone. Only a subset of NT’s API...”) *the instructions comprising: providing a real-time kernel; the real-time kernel initializing the computer network;* (page 64 Figure 1 RTKernel-32 and text) *loading an executable into memory, wherein the memory is allocated for the executable, and wherein the executable is programmed to execute in a WIN32 execution environment;* (pages 64-65) *the real-time kernel permitting execution of the executable in an emulated WIN32 execution environment, wherein the emulated WIN32 execution environment utilizes an emulated subset of WIN32 execution environment services; and the executable operating real-time in the emulated WIN32 execution environment* (Figure 2 on page 66 and in the section on page 66 entitled “SCALABILITY...different parts of its Win32 emulation library are modules linked...” and pages 65 & 66).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3 and 17 are rejected under 35 USC § 103(a) as being unpatentable over "Win32: A suitable Standard for Real-Time Embedded Systems?" by Peter Peterson referred to as *Peterson*.

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6.1 As regards dependent claims 3 and 17, while *Peterson* substantially teaches the limitations disclosed in claims 1, 2, 4-16 and 18-32, *see rejection above*, however, *Peterson* does not expressly disclose the limitation of having *inter-process communications*.

Official notice is taken that *inter-process communications* was well known at the time of the invention in the analogous art of US Patent 6,233,602 *Van Venroy* entitled "Dynamically Allocating Server Processes to Client Processes" see Col. 7 lines 13-18 "...All interprocess communication mechanisms from every process to every node to any other process..."

At the time the invention was made, it would have been obvious to a person of ordinary skill to have realized that Windows NT, which is a networking operating systems would support inter-process communications as a mechanism to facilitate communications between different threads/processes running on different computers in a network of computers.

The suggestion for doing so would have been that the support for inter-process communications is required for any network operating system to effectively communicate with different computer applications over a network, in the case of a real-time kernel *Van Venroy* teaches the use of inter-process communications in a real-time environment (Col. 7 lines 24-25 "...realized by the OS-9/CD-RTOSSystem cited earlier..." *et seq.*).

Therefore, it would have been obvious to modify *Peterson* to obtain the invention as specified in claims 3 and 17.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dwin McTaggart Craig



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9/24/02